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ABSTRACT

The varied forms and semantic factors of Japanese ordinal expressions are related to one another in a coherent system. In Japanese, the cardinal number form is a numeral compound in construction with a referent. The numeral compound consists of a number and a numeral adjunct. Numeral adjuncts are derived from bound forms, or numeral suffixes, and free forms, or count nouns. Underlying the behavior of Japanese ordinals is a basic division of two types of sequences: quantitative (open-ended and composed of independent members) and constitutive (closed, with interlocking and interdependent members). The form associated with quantitative sentences consists of a "-me" ordinal modifying by means of the particle "no" a class noun or a noun denoting a container. Numeral adjuncts in quantitative sentences specify four kinds of units: container, partitive, collective, and generic. In constitutive sentences the ordinal affixes "-me," "dai-" and "-banme" are used, where "dai-" has a more formal connotation than "-me" and "-banme." A number of special constitutive sequences such as standard measures, time units, appellatives, and quasi-appellatives are grouped and explained separately. (CHK)

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Ordinal Expressions in Japanese

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As far as I can tell, no attempt has ever been made toward achieving a comprehensive description of Japanese ordinal expressions. Yet the diversity of ordinal forms and of situations in which one form is appropriate to the exclusion of others insures that anything less than a systematic integration leaves too many facts unrelated or unexplained. This diversity is seen on the formal level in the existence of two ordinal affixes, dai- and -me, and in the use of different classes of words to denote the members of ordinal sequences. Underlying the interaction of these forms is a sense that differentiates several types of sequences. But varied as the forms and their semantic factors are, they can still be related to one another as aspects of a coherent system; and that is what I have set out to do in this article.

Since ordinals are derived from cardinal number forms, we may expect that the diversity of elements in the ordinal system springs from a similar condition of the cardinal system. This is true; and consequently reference to the basic features of the cardinal system (not merely to cardinal numbers as isolated forms) is necessary to a description of ordinal expressions. In an earlier article (Backus 1972) I detailed my conception of the cardinal number system. A recapitulation of the main line of reasoning in that article should provide an adequate basis for describing the ordinal system.

The major mode of counting in Japanese enumerates attributive units in reference to things that are conceived of as independent and self-contained. The form is a numeral compound in construction with a referent. The numeral compound consists of a number and a numeral adjunct. The adjunct specifies the attributive unit while the number enumerates it; and the compound bears toward its referent either a quantitative reference, as in gosatu no hon 'five books' (lit. 'five bound volumes [-satu] in reference to the entity "book"'), or a constitutive reference, as in gosyoo no hon 'a book of five chapters' (syoo 'chapter'). Numeral adjuncts are derived from two form classes: bound forms, which I call numeral suffixes, and free forms, which I call count nouns. Count nouns denote attributive entities and appear in number expressions usually in the adjunct position, where the things they denote are directly enumerated. They constitute a subclass of the noun; and in contrast to them I designate other nouns loosely as class nouns, because they always occupy the referent position in number expressions, and in a quantitative reference with numeral compounds, the things they denote are classified at the same time as they are quantified. The mode just described I call the compound-referent mode. It is accompanied by a minor mode consisting of a number modifying a class noun (e.g. gohei 'five soldiers', gozyuu no hei 'fifty soldiers'), which I call the number-referent mode.

Like the cardinal number system, the system of ordinals can produce no form which is universally applicable. Although the various forms share the single function of indicating position in a sequence, each is restricted by semantic conditions to a local range of usage, which does not, however, prevent the ranges from overlapping and thereby bringing the forms into connotative contrast with one another. On the formal level the system appears quite complicated, and a description that proceeds from form to meaning moves laterally and depends for consistency on constant referrings back and repetitions of material for comparison. A description that starts from meaning, however, while not wholly free from these shortcomings, has the advantage of

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allowing progression from broader to narrower generalizations. It is therefore the semantic approach which I have chosen; and inspection of the facts from that standpoint has led me to the following inference: that underlying the behavior of Japanese ordinals is a basic division of two types of sequence--quantitative and constitutive--that reflect the quantitative and constitutive references in compound-referent counting. A quantitative sequence is like a line of people in front of a movie; it is open-ended and composed of members that are independent of each other and happen for the moment to have fallen into a series. A constitutive sequence, by contrast, belongs to a system, and is therefore a closed sequence whose members are interlocked, interdependent parts of the system. A synthesis of the ordinal forms and their uses according to this conception comprehends all the facts insofar as I am aware of them.

Quantitative Sequences

The form associated with quantitative sequences consists of a -me ordinal modifying by means of the particle no a class noun or a noun that denotes a container. Class nouns denote things that are considered to be independent and self-contained. Container words, on the other hand, I treat as count nouns, for they denote containers either as measures or as objects; but in the second sense they are to be grouped with class nouns as far as their behavior in ordinal expressions is concerned. These nouns indicate the content of the sequence. A -me ordinal is a numeral compound (number + numeral adjunct) bearing the ordinal suffix -me. The adjunct specifies units that particularize the content of the sequence, and the number and ordinal suffix together designate the position of one of these units within the sequence. Concerning the function of the numeral adjunct as a form that particularizes the content of the sequence, this is seen most clearly when the adjunct is denotatively essential to the utterance, as in gohakome no ringo 'the fifth box of apples'. Here 'apple' (ringo) makes up the content of the sequence, but it is only when the unit 'box' (hako) is referred to the content that the members of the sequence--boxes of apples--are revealed. A literal translation of gohakome no ringo would run 'the fifth boxful in reference to the entity "apple."' When the adjunct has only a connotative value, as in the case of -nin 'human being', the noun it refers to (its referent) will be specific enough to indicate both the content and members, and the adjunct becomes redundant. Goninme no gakusei 'the fifth student' is literally 'the fifth human being in reference to the entity "student."'

Numeral adjuncts in quantitative sequences specify four kinds of units. These are exemplified below, where the adjuncts represented as bound forms are numeral suffixes and those represented as free forms are count nouns.

container units
- gohaime no koohii 'the fifth cup of coffee' (-hai 'cup')
- gobinme no kusuri 'the fifth bottle of medicine' (bin 'bottle')

partitive units
- gohukume no kusuri 'the fifth dose of medicine' (-huku 'dose')
- gokabume no kiku 'the fifth stock of chrysanthemums' (kabu 'stock')

collective units
- gotuime no sensu 'the fifth pair of fans' (-tui 'pair')
- gokumime no tebukuro 'the fifth pair of gloves' (kumi 'set')

generic units

itutume no hako 'the fifth box' (-tu: nondescript objects)
gohonme no bin 'the fifth bottle' (-hon: long objects)
gosatume no hon 'the fifth book' (-satu: bound volumes)
godaime no kuruma 'the fifth car' (-dai: vehicles)

Generic units refer things to categories, and the adjuncts that represent them may therefore be called classifiers. Classifiers have an important function in the cardinal number system, where their descriptive value enhances the individuality of the referent. A large body of seldom used professional or literary classifiers is available to furnish highly connotative substitutes for a smaller number of classifiers whose meanings have become attenuated through habitual use. Interplay between these two groups of classifiers lends a certain expressiveness to diction. In ordinals belonging to quantitative sequences, however, the connotative resources of the less used classifiers are not utilized, and the formation of -me ordinals is restricted to numeral compounds that contain the habitually used classifiers. All of these turn out to be numeral suffixes; in addition to the ones already illustrated are the following: -do for counting recurrences of a phenomenon, -hiki for animals, -ban for traditional entertainments, -hatu for discharges of weapons, -ken for houses, -mai for flat objects, and -soo for watercraft. Other classifiers are unlikely to be found in -me ordinals. Doubtless this restriction on the occurrence of classifiers with -me has to do with the fact that -me in some contexts is an informal counterpart of the ordinal prefix dai-. Many of the less used classifiers have the same connotation of formality as dai-; quantitative sequences, being casual, are also informal, and neither the ordinal prefix dai- nor the less used classifiers appear in them.

The presence of a classifier in a -me ordinal results in a form that qualifies a member of a sequence at the same time as it designates its position. But evidently this qualification, which enhances the individuality of things in the process of counting them, is often felt to be inconsistent with the idea of arrangement in ordinal expressions; for the classifier may be replaced, and very often is replaced, by a suffix having the abstract meaning of 'place in a sequence'. This suffix is -ban;[1] and the -me ordinals built on it represent a specialized development of the form, whereby the particular meanings of the different classifiers that distinguish and restrict one -me ordinal in relation to another are all subsumed in the abstract meaning of -ban. To separate this specialized -me ordinal from the others, I use the term '-banme ordinals'. In quantitative sequences a -banme ordinal may substitute for any -me ordinal built on a classifier, and in fact, -banme ordinals are preferred. Thus goninme no gakusei becomes gobanme no gakusei 'the fifth student', which is literally 'the fifth place in sequence in reference to the entity "student."' Similarly, for the examples given under 'generic units' above, we get the corresponding forms gobanme no hako, gobanme no bin, gobanme no hon, and so forth.[2]

Finally, it should be noted that ordinal forms are nouns, so that goninme, gobanme, etc. are to be translated as 'the fifth one', just as a form like gohakome is translated 'the fifth boxful'.

Constitutive Sequences

In constitutive sequences the ordinal affixes -me and dai- come into contrast, giving two types of forms. The -me type is represented by the same two ordinal forms that occur in quantitative sequences. In constitutive se-

quences, however, the adjunct in the -me ordinal denotes a member of a system, and the ordinal is a noun specifying a member of a system occupying a given place in a sequence. The system, if stated, is indicated by a noun that modifies the ordinal: keiyakusyo no gokoomokume 'the fifth item in the contract'. The sequences exemplified below are closed sequences belonging to systems; their members are denoted by either numeral suffixes or count nouns.

-haku 'beat'
  gohakume 'the fifth beat' of a rhythmic system

zi 'written word', 'written symbol'
  gozime 'the fifth word' in a sentence

-hari 'stitch' as a stroke of the needle
  goharime 'the fifth stitch' in the process of sewing

dankai 'stage'
  godankaime 'the fifth stage' of a process

kaikyuu 'rank'
  gokaikyuume 'the fifth rank' of a hierarchy

gakka 'lesson'
  gogakkame 'the fifth lesson' in a textbook

heya 'room'
  goheyame 'the fifth room' in the corridor of a building

-gyoo 'line' of writing
  gogyoome 'the fifth line' of a document

kumi 'group'
  gokumime 'the fifth group' in an organization of people

A few adjuncts denote units that fit both quantitative and constitutive sequences

hookoku no gogyoome no suuzi
(quant.) 'the fifth line of figures in the report'
(const.) 'the figures in the fifth line of the report'

kankoo ryokoo no gokumime no hitotati
(quant.) 'the fifth group of people in the sightseeing tour'
(const.) 'the people in the fifth group of the sightseeing tour'

Constitutive sequences are also expressed by -banme ordinals modifying nouns that denote members of systems. In quantitative sequences, as we have seen, -banme ordinals are paired with -me ordinals formed on classifiers, with the -me ordinal stressing individuality and the -banme ordinal stressing order. That parallelism does not exist in constitutive sequences; whether a count noun or a class noun, if the word denotes a member of a system, it cannot be modified by a -me ordinal containing a classifier.[3] This is no doubt because the effect of the classifier is to present the entity as a separate thing

belonging to a category, whereas the members of constitutive sequences are felt to be interdependent. In the following examples the nouns are count nouns.

gobāme no koomoku 'the fifth item' gobāme no kaikyuu 'the fifth rank'

gobāme no zi 'the fifth word' gobāme no gakka 'the fifth lesson'

gobāme no dāṅkai 'the fifth stage' gobāme no heya 'the fifth room'

If the count noun denotes a unit of the kind that fits both quantitative and constitutive sequences, -bāme restricts its meaning to constitutive.

gobāme no kumi no hitotati 'the people in the fifth group'

Many class nouns denote things that belong to larger wholes or things that, when conceived in sequence, become interdependent. In such cases the sequence is constitutive, and -me ordinals formed on classifiers are inappropriate. As an example of a thing that belongs to a larger whole, consider the following:

koyubi no nibāme no kāṅsetu 'the second joint of the little finger'

To illustrate how an essentially independent thing becomes a constituent of a constitutive sequence, nouns denoting offspring make excellent examples. In the following, Mr. Yoshida's daughter belongs to a conceptual order; she is not lined up with his other daughters before our eyes.

Yosidasāṅ no sāṅbāme no musume 'Mr. Yoshida's third daughter'

Compare this case with the following, which is quantitative:

Yosidasāṅtati ni sāṅniṅme (or sāṅbāme) no musume ga umareta.
'The Yoshidas have had a third daughter born to them.'

It is probably true to say that if the order is conceptual rather than perceptual, if it is something we think up rather than look at, then the sequence will be constitutive. For mental conception implies completeness of the concept; it will be treated as complete until new facts require modification. Therefore class nouns that denote conceptual entities will probably not be found with -me ordinals containing a classifier. In the following examples it is the order that counts, not the individuality of the elements, which are either conceptual or constituent.

gobāme no siiṅ 'the fifth scene' in a play

gobāme no kata 'the fifth type' in a classification

gobāme no roṅbuṅ 'the fifth article' in a collection

gobāme no kyoo 'the fifth sutra' in a collection

In constitutive sequences -me and -bāme ordinals come into contrast with

dai- ordinals. Dai- is a Chinese ordinal prefix, which, like most loanwords from Classical Chinese, acquired an academic flavor through the use of Chinese as the written language of Japanese scholars. The academic origin of dai- has resulted in its possessing a distinctive connotation of formality and deliberateness. Accordingly, a dai- ordinal designates formally position in a sequence, implying a deliberateness of arrangement that precludes the possibility of the sequence being fortuitous. That is why dai- ordinals occur only in constitutive sequences. The ordinal suffix -me, on the other hand, has no intrinsic connotation, which is why -me and -banme ordinals occur in both types of sequence; but by contrast with dai-, -me acquires a connotation of informality and casualness. Although this difference between the two ordinal affixes seldom comes through in English translation, it is striking whenever it can be reflected, as in the case of syoo 'chapter', where daigo-syoo is 'Chapter V' while gosyoome is 'the fifth chapter'.

Dai- ordinals are formed by prefixing dai- to the Chinese-derived numerals--but with one exception, that dai- is regularly prefixed to the native numeral yon, yo- 'four', whose Chinese equivalent, si, is obsolescent. The resultant form is a noun that designates position in a sequence: daigo 'the fifth one'. Dai- ordinals combine with both numeral adjuncts and class nouns in forms that under certain conditions exhibit assimilation at the juncture;[4] and like the -banme ordinals, they may also be set off from nouns by the particle no. As to the occurrence of no, the particle is obligatory only when two or more ordinals precede the noun or when the ordinal itself is modified by a preceding word.

daisan daiyon no koomoku 'the third and fourth items'

Nihon daiiti no sizin 'the foremost poet in Japan'

Otherwise, it is less likely to be found if the noun is a Chinese loanword, and even less likely if it is a monome (i.e. a Chinese loanword represented by a single graph). Further, there are certain environments, which will be pointed out presently, from which no is excluded. The occurrence of no after dai- ordinals is conditioned by the fact that its presence contradicts the formality of dai-; it constitutes an intrusion by a Japanese particle into a Chinese noun string, which is avoided generally in sophisticated diction. (Compare the preferred keizai seisaku 'economic policy' with the unsophisticated keizai no seisaku.)

Dai- ordinals combine with numeral adjuncts that denote members of systems. But owing to the formal connotation of dai-, the range of usage for these ordinals does not coincide with that of the -me ordinals. Dai- does not occur with numeral suffixes that produce compounds of the mixed type--suffixes, in other words, that admit the native numerals hito-, huta-, and mi-. Semantically, these suffixes have a homeliness about them that renders them incompatible with dai-. -Hari 'stitch', among the forms used earlier to illustrate -me ordinals, is an example. On the other hand, count nouns that produce numeral compounds of the mixed type do occur with dai- ordinals. Still, the connotation of dai- cannot be ignored in the choice of forms. For example, heya, the common word for 'room', might better be replaced by the formal -situ (daigositu 'the fifth room'), though daigo (no) heya is not impossible.

Conversely, there are adjuncts so closely associated with literary diction that they seem to take dai- ordinals exclusively. They are all monomes

and include literary classifiers such as -hen 'written work' for counting written works, -syu 'head' for counting Japanese poems, ku 'verse' for haiku and senryuu verses, and kyoku 'musical piece' for songs; in fact, any monomial classifier except the commonly used ones mentioned in connection with -me ordinals belongs to this group that take dai- ordinals only. In addition are monomial count nouns that denote units in formally established systems of classification and organization, such as bu 'division', rui 'class', kyoku 'bureau', bu 'department', and ku 'district'. Moreover, these count nouns, including the ones listed above as classifiers, are apparently never set apart from the ordinal by the particle no.

The following examples of numeral adjuncts with dai- ordinals correspond in part to the list given earlier for -me ordinals. Although two of these adjuncts, -gyoo 'line' and kumi 'group', appear also in quantitative sequences, the presence of dai- restricts them here to a constitutive sequence.

daigohaku 'the fifth beat' of a rhythmic system

daigozi, daigo no zi 'the fifth word' in a sentence

daigo (no) dankai 'the fifth stage' of a process

daigo (no) kaikyuu 'the fifth rank' of a hierarchy

daigo (no) gakka 'the fifth lesson' in a textbook

daigogyoo 'the fifth line' of a document

daigo (no) kumi 'the fifth group' in an organization of people

daigohen 'the fifth work' in a collection

daigorui 'the fifth class' in a classification

Dai- ordinals occur with class nouns whose meanings are appropriate to a constitutive sequence, and serve in this environment as formal counterparts of -banme ordinals.

koyubi no daini (no) kansetu 'the second joint of the little finger'

Yosidasan no daisan (no) musume 'the third daughter of Mr. Yoshida'

daigo (no) siin 'the fifth scene' in a play

daigo (no) kata 'the fifth type' in a classification

daigo (no) ronbun 'the fifth article' in a collection

daigokyoo, daigo no kyoo 'the fifth sutra' in a collection

But for this case, in addition to class nouns it is necessary to recognize a category of quasi nouns. These are bound monomes imperfectly naturalized from Chinese but possessing the full substantive value of nouns. Such bound forms may be simply the on reading of a logograph, like -zi, which cor-

responds to the native word tera 'Buddhist monastery', 'temple'; or they may be the substantive morpheme abstracted from a binome or trinome, such as -sen 'line' from boogyoosen 'defense line'. In the academic style of writing, dai- ordinals form compounds with quasi nouns in a constitutive sequence.

dainizi 'the second monastery' daiissen 'the first line of defense'

Finally, mention should be made of an unusual ordinal compound that belongs to the dai- type. It consists of a dai- ordinal, a numeral suffix, and -me. Such compounds have the same usage as that described above for the dai- ordinals. The suffix -me, therefore, is redundant. The presence of both ordinal affixes together results in a longer form that rings with a deeper tone of formality and emphasis suited only to a few contexts. For this reason the compounds occur infrequently.

migi no tanka no daiisyume 'the first of the foregoing poems'

daininitime no kaigoo 'the meeting on the second day'

daisanbanme no dankai 'the third stage'

As we have seen, a constitutive sequence may be composed of dai-, -me, and -banme ordinals, and the formal connotation of dai- results in a contrast of formality with informality. But dai- also connotes deliberateness, which means that the members of a dai- sequence are fixed relative to its beginning. This condition is reflected in the fact that dai- ordinals can never be used in a sequence where a base point is stated; for the statement of a base point, even if it is the beginning, indicates a sequence that has grown from a point--a dependent sequence--instead of one that is absolute and complete in itself. Dai- ordinals are confined to absolute sequences, while -me and -banme ordinals occur in both kinds. For this reason -me and -banme may be said to connote casualness in contrast to the deliberateness of dai-. In the following examples of dependent sequences, then, there are no formal counterparts to the ordinals that appear.

ue kara gogyoome 'the fifth line from the top'

hazime kara gozime
hazime kara gobanme no zi 'the fifth word from the beginning'

sita kara gokoomokume
sita kara gobanme no koomoku 'the fifth item from the bottom'

migi kara goheyame
migi kara gobanme no heya 'the fifth room from the right'

owari kara gobanme no ronbun 'the fifth article from the end'

It goes without saying that sequences with a stated base point may also be quantitative, in which case -me ordinals formed on classifiers appear in them: hidari kara goninme (or gobanme) no gakusei 'the fifth student from the left'.

Special Constitutive Sequences

The sequences discussed under this heading conform to the character of

constitutive sequences while at the same time exhibiting peculiarities that make it awkward to fit them into a general description.

Sequences of Standard Measures

Standard measures are nouns when they denote the type of measure: kiromeetoru de arawasu 'to express it in kilometers'. They are bound forms when they denote a particular unit of the type: kyoosoo no kono itikiromeetoru 'this (one) kilometer of the race'. In ordinal expressions they give rise only to one form, -me ordinals.

kyoosoo no gokiromeetorume 'the fifth kilometer of the race'

Time Sequences

Time units are represented by bound forms, class nouns, and count nouns as follows:

bound forms	class nouns	count nouns
-niti, -ka, -kka 'day'	hi 'day'	zikaN 'hour'
-yoobi 'day of the week'		huN 'minute'
-kagetu 'month'	tuki 'month'	byoo 'second'
-getu 'month'		syuu 'week'
-neN 'year'	tosi 'year'	seiki 'century'

Unlike constitutive sequences in general, where -dai is restricted to absolute sequences while -me and -banme are not, in the case of time units dai- and -banme occur only in absolute sequences and -me occurs only in dependent sequences. Thus time sequences are characterized by a neat separation of forms in which dai- and -banme make formal-informal counterparts in absolute sequences, and -me stands apart from them as the only form appropriate to a dependent sequence.

Inspection of the forms representing time units shows a perfect correspondence between the bound forms and class nouns for representing 'day', 'month', and 'year'.[5] The class nouns take -banme ordinals, and the bound forms (except -kagetu) take dai- ordinals. The count nouns, of course, take both dai- and -banme ordinals; and this is one of the environments in which dai- ordinals are never set off by the particle no. It might be noted parenthetically that syuu 'week' has an alternate form, syuukaN, also a count noun, but syuukaN takes no part in ordinal expressions. -Me ordinals are formed on the count nouns and on those bound forms which are numeral suffixes, namely -niti, -ka, -kka; -kagetu; and -neN.

Absolute time sequences belong to a process or else to a formal segment of the flow of time.

kaigi no daiyokka / yonbaNme no hi 'the fourth day of the conference'

zikkeN no daigoneN / gobaNme no tosi 'the fifth year of the experiment'

sikeN no daiiti zikaN / itibaNme no zikaN 'the first hour of the examination'

ryokoo no dainisyuu / nibaNme no syuu 'the second week of the trip'

tosi no dairokugetu / rokubaṅme no tuki 'the sixth month of the year'

syuu no daisaṅyoobi / daisaṅniti / sanbaṅme no hi 'the third day of the week'

tuki no daiissyuu / itibaṅme no syuu 'the first week of the month'

hookeṅ zidai no daini seiki / nibaṅme no seiki 'the second century of the feudal age'

Dependent time sequences start from a point in time.

kaigi no ato yokkame ni 'on the fourth day after the conference'

zikkeṅ no hazime kara goneṅme 'the fifth year after the beginning of the experiment'

ryokoo ni dekakete kara nisyuume 'the second week after starting on the trip'

tosi no hazime kara rokkagetume 'the sixth month from the beginning of the year'

syuu no hazime kara mikkame 'the third day from the beginning of the week'

tuki no hazime kara issyuume 'the first week from the beginning of the month'

hookeṅ jidai ga owatte kara niseikime 'the second century after the feudal age ended'

The time units just discussed are seen to be formal units when compared with the natural units asa 'morning', yuugata 'evening', yoru 'night', and baṅ 'evening' or 'night'. It may be argued that 'day' is also a natural unit, which in one sense it is. But the Japanese equivalents given earlier denote calendar days of twenty-four hours; 'daytime', by contrast, is hiru or hiruma. The natural time units, then, turn out to be parts of the calendar day. Except for baṅ, which is a count noun, they are represented by class nouns of the type that do not enter into construction with numbers or numeral compounds. In cardinal number expressions the units represented by class nouns can be counted only indirectly by mediation of a numeral compound built on the adjunct that denotes days. For example, 'It took them five mornings to finish the job' is rendered Asa hataraite sigoto o owaru no ni ituka kakatta 'Working mornings, they took five days to finish the job'. Baṅ, of course, can occupy the adjunct position: gobaṅ kakatta 'took them five nights'.

When natural time units appear in an absolute sequence, they may be modified by three kinds of ordinals:

kaigi no daininiti no baṅ / hutukame no baṅ / nibaṅme no baṅ 'the second evening of the conference'

The presence of hutukame 'the second day' constitutes a deviation from the rule for formal time units that -me ordinals are confined to dependent sequences. But the ordinal here has a different function; it does not refer primarily to days but instead is mediating to put evenings into sequence, much like a -banme ordinal: 'the second-day evening' or 'the evening of the second day'. On the other hand, hutabanme 'the second evening', as an ordinal built directly on ban, follows the rule for time units generally and occurs only in dependent sequences. It should be noted, moreover, that the meaning of hutukame no ban differs slightly from that of nibanme no ban. In both kaigi no hutukame no ban and kaigi no daininiti no ban it is the evening of the second day of the conference, whereas in kaigi no nibanme no ban it is the second evening of the conference. A party for the conferees that took place on the former would be one party held on the second day, while kaigi no nibanme no ban no paatii implies the second of two parties.

In dependent sequences natural time units are ordered by -me ordinals only. In the case of ban the ordinal may be formed directly on the count noun

kare ga dekakete kara hutabanme 'the second evening after he left'

or on the numeral suffix -niti, -ka, -kka.

kare ga dekakete kara hutukame no ban 'the evening of the second day after he left'

The other natural units are ordered according to the second form.

kare ga dekakete kara hutukame no asa 'the second morning after he left'

Appellative Sequences

In an appellative sequence the ordinal serves as a formal designation of some thing or place, functioning as a distinctive name based on position in a sequence rather than as an indicator of position per se. The form is a dai- ordinal preceding a noun without no. The absence of no in this case is but an instance of a general rule that calls for its omission in proper names. Compare Tookyoo Daigaku 'Tokyo University' with Tookyoo no daigaku 'a university in Tokyo'.

daisan sekai 'the third world'

daisiti kantai 'the seventh fleet'

daiyonzyuu roku kokkai 'the 46th Diet'

daiitt kaihei kookuu sidan 'the 1st marine airborne division'

Quasi-Appellative Sequences

These are so called because the group includes not only clearly appellative sequences but others that may be interpreted as such and still others that probably cannot be considered appellative. The distinction, however, is not so important as the fact that all of them are absolute sequences. Moreover, they share the same form; and it is difficult to imagine how the apparently nonappellative sequences could have been established without the appellative ones in mind.

Divisions of an organization may be designated formally by dai- ordinals, as daiiti kumi 'the first group' or dainibu 'the second department'. Once these names are recognized, they may be abbreviated by dropping the dai- :

iti kumi 'group one', nibu 'department two'. In most instances the abbreviated designations become identical with cardinal number forms (nibu 'two departments'), so that their occurrence depends on a determinative context. Except for a very few cases, they are to be taken as informal variants of the dai- forms.

As far as I know, there is only one case where a quasi-appellative ordinal occurs with a class noun. This is in the designation of military units, where, for example, dainizyuu rentai 'the 20th regiment' may be abbreviated to nizyuu rentai. Otherwise, the ordinals occur with numeral adjuncts. There is a fairly large body of numeral adjuncts that denote units which are regularly conceived of as belonging to absolute sequences, and these are found with quasi-appellative ordinals so often that they may be said to produce numeral compounds that combine the cardinal and ordinal meanings. Thus gosyoo, for example, is equally 'five chapters' or 'chapter five' depending on its context. In addition to these, there is a smaller body of adjuncts that produce numeral compounds which are primarily or exclusively ordinal, such as gokyuu 'grade five'. Most of the adjuncts that behave in this way are presented below, together with some observations on their relation to other kinds of ordinal sequences. Concerning the count nouns among them, it may be stated at the outset that they do not occur with -banme ordinals, nor are they separated from dai- ordinals by no.

Units of written material are represented by a set of count nouns that occur in absolute sequences formally with dai- prefixed and informally with dai- omitted. They seldom produce -me ordinals, though -me is required if the sequence happens to be a dependent one (owari kara gosyoome 'the fifth chapter from the end'). Numeral compounds formed on these count nouns serve as informal designations provided the context is such as to establish the ordinal meaning: syoosetu no nibu 'part two of the novel'.

Plays	Books	Contracts	Budgets
maku 'act'	bu, hen 'part'	syoo 'chapter'	bu 'part'
ba 'scene'	syoo 'chapter'	zyoo 'article'	kan 'article'
	setu 'section'	koo 'clause'	koo 'clause'
Periodicals	ka 'lesson'	setu 'paragraph'	moku 'item'
kan 'volume'			setu 'subitem'
goo 'number'			

The following adjuncts appear only in absolute sequences, i.e. -me is never suffixed to them: han 'edition', satu 'impression', sintoo 'degree of consanguinity', -nan 'son', and -zyo 'daughter'. Nihan is 'the second edition' or 'two editions'. It is characteristic of these adjuncts (except for sintoo) that the first position in the sequence is designated by a nonnumerical form. The first edition is called syohan 'initial edition', and the first impression syosatu 'initial impression'. -Nan and -zyo denote offspring in a genealogy. The first two sons are called tyoonan 'eldest' and zinan 'next eldest', while the third son is sannan, which also means 'three sons'. -Zyo is treated in the same way. Dai- may be prefixed only to the numerical forms.

Three adjuncts--kai 'storey' or 'floor', peezi 'page', and -tyoo 'leaf'--make up informal series. Dai- probably never occurs with kai, only rarely with the other two. -Me is used for dependent sequences: ue kara yonkaime 'the fourth floor from the top'. -Tyoo denotes a page in a Japanese-style book, in which the obverse and reverse together constitute one leaf. Peezi is unusual in that it denotes a detachable part. Gopeezi is 'five pages' or

'page five' in a book (note also owari kara gopeezime 'the fifth page from the end'); but if the pages are torn out, the fifth one is gomaime (or gobañme) no peezi, a member of a quantitative sequence.

The following time units compose quasi-appellative sequences in chronologies: -niti, -ka, -kka 'day', -neñ 'year', neñdo 'fiscal year', and seiki 'century'. Hutuka is the second day of the month as well as 'two days'; but the first day is rendered by a nonnumerical form, tuitati 'commencement of the moon'. Ninen is the second year of a chronology--A.D. or B.C., or else of a calendrical era as in Syoowa ninen 'the second year of Showa'; it is also 'two years'. The first year moving forward from the base point of a chronology is called gannen 'base year'; but moving backwards, it is itinen as in kigenzen itinen '1 B.C.'. -Neñ also denotes units of a student's formal education: daigaku no itinen 'the first year of college'. Neñdo (lit. 'year-measure') denotes a twelve-month period starting from other than January. If the first fiscal year refers to the first year of activity of an institution, it is called syoneñdo 'initial year-measure'; if it refers to the first year of a calendrical era, it is called gañneñdo 'base year-measure', as in Syoowa gañneñdo 'fiscal 1926'. Nineñdo is 'the second fiscal year' or 'two fiscal years'. Isseiki is 'one century' or 'the first century' as a unit in the Western chronology. Dai- and -me do not occur with these adjuncts when the units pertain to chronologies.

Related to the foregoing are gakki 'school term' and gakuneñ 'school year'. These denote formal units of the educational structure, and as such, may occur with dai-; but -me is probably never used with them. However, gakuneñ also denotes a year in a student's educational chronology (like -neñ above), and in this meaning takes neither ordinal affix: sañgakuneñ made de daigaku o yameru 'to quit the university after getting as far as the third year'. Itigakki is 'the first term' or 'one term', itigakuneñ 'the first school year' or 'one school year'.

There are three adjuncts that denote place in a succession (-kai 'recurrence', -zi 'order', and dai 'stage'), each of which behaves in a way peculiar to itself. -Kai occurs in compounds that enumerate recurrences of a phenomenon, as in sañkai no kaigi 'three conferences', implying that they are three recurrences of the same event, either with the same conferees or on the same subject. (Cf. mittu no kaigi, three totally unrelated conferences.) The third conference is sañkaime no kaigi or daisañkai no kaigi. The second ordinal becomes appellative by dropping the no (daisañkai kaigi), and this may be abbreviated to sañkai kaigi 'the third conference'. -Kai is also used to designate divisions of certain sports contests: (dai-) sañkai no ura 'the second half of the third inning'. Note also syokai 'initial recurrence': syokai no taimeñ 'the first interview'.

-Zi denotes order in a temporal succession and in a consequential succession. When it refers to a temporal succession, it functions as a formal synonym of -kai: sañzi no kasai 'three successive conflagrations', daisañzi no kasai 'the third conflagration'. The compounds do not occur with -me. The dai- ordinals become appellative by dropping no: dainizi Konoe naikaku 'the second Konoe Cabinet', daiitizi sekai taiseñ 'the First World War'. But in temporal successions these appellative forms are not abbreviated. However, when the adjunct refers to a consequential succession, the compounds never enumerate and are to be taken as abbreviations of dai- ordinals: (dai-) nizi kyooiku 'secondary education', (dai-) sañzi seisañ 'tertiary production'.

Dai denotes a stage in a temporal succession of human beings. The compounds frequently take -me, rarely dai-. The first stage is syodai 'initial stage'. The compounds quantify human beings by stages in natural descent as

well as in any artificial succession: nidai no soozokuniⁿ 'two generations of heirs', godai no sooridaiziⁿ 'five successive premiers'. The compounds acquire an ordinal meaning in the following environments:

1) When they precede a noun that denotes status: sāndai no Amerikaziⁿ 'a third-generation American'. But since the form is ambiguous in that it can also mean 'three generations of Americans', it is confined to contexts that allow only an ordinal interpretation: Kare wa sāndai no Amerikaziⁿ da 'He is a third-generation American'. Unambiguously ordinal forms are sāndaime no Amerikaziⁿ and Amerikaziⁿ no sāndaime.

2) When they precede a noun whose meaning has been restricted by a modifying clause: koko ni nyuusyoku sita nidai no hitobito 'the second generation of people who settled here'. Such restricted nouns can be regarded as denoting status. But in this environment the compound is not ambiguous, though it may be replaced by nidaime no hitobito or hitobito no nidaime. 'Two generations of people who settled here' is koko ni nyuusyoku sita hitobito nidai, for the compounds in the postnominal position are always quantitative: or else one can substitute the count noun sedai 'generation': koko ni nyuusyoku sita nisedai no hitobito.

3) When they precede a noun that denotes an office: godai sooridaiziⁿ 'the fifth premier'. This form may be considered quasi-appellative, for the omission of no is obligatory and dai- (though it happens rarely) may be prefixed to the compound. The preceding two usages are probably extensions of this one.

Similar to this third case in that no is omitted is the use of -me ordinals to designate position in a succession of artists bearing a hereditary name: sāndaime Kikugoroo 'the third Kikugorō'. But in this environment the ordinal suffix is necessary.

There are four adjuncts that denote positions in sequences used for stating rank: -baⁿ 'number' or 'place', -i 'rank', -kyuu 'grade', and -daⁿ 'grade'. Numeral compounds formed on these adjuncts are primarily ordinal, but they also enumerate positions when they modify direction words expressing movement up and down the hierarchy. Dai- occurs frequently with -i but seldom with the others. The compounds do not take -me.

The adjunct -baⁿ has two functions: designating and ranking. In the first function the compounds designate certain items by number such as telephone and license numbers, theater seats, streetcars, and trains. This is an appellative function, and no is often omitted: hatibaⁿ hoomu 'no. 8 station platform'. In the second function the compounds indicate clothing sizes (sitibaⁿ no kutu 'size seven shoes') and placement scores (nibaⁿ de kyuudai suru 'to pass in second place'). In this second function the compounds may enumerate: nibaⁿ ue no boosi 'a hat two sizes larger', zyuubaⁿ agaru 'to go up ten places'.

Compounds formed on -i are used to rank things in general: (dai-) itii no haiyuu 'an actor of the first rank', nii agaru 'to go up two places'. The adjunct also denotes ranks in the old court aristocracy. In this meaning the obsolete pronunciations are preserved in sāⁿmi 'third rank' and sii 'fourth rank', and dai- does not occur with the compounds. Further, the compounds are exclusively ordinal; movement up and down the court ranks is expressed by compounds formed on -kyuu.

-Kyuu denotes grades in a scale for evaluating the quality of merchandise and the competence of public servants. In this usage the compounds almost always combine with monomial bound forms: ikkyuuhiⁿ 'first-grade goods',

nikyuukan 'an official of the second grade'. -Kyuu also denotes school grades (gakkyuu), but here the compounds are restricted to the adverbial position, where they always enumerate: nikyuu sita da 'to be two grades lower'. Finally, -kyuu denotes grades of accomplishment in the traditional arts. The -kyuu grades belong to the junior section and make a pair with the -dan grades of the senior section. Syokyuu is the highest junior grade, nikyuu the second highest, and so on. The next grade above syokyuu is syodan, which is the lowest grade in the senior section; thence nidan, etc. Examples: zyuudoo de sankyuu da 'to be at the junior third grade in judo', nikyuu agaru 'to go up two grades'; nidan no kikaku 'a chess player of the senior second grade', itidan ue da 'to be one grade higher'.

The remaining adjuncts produce compounds that are purely ordinal. They do not occur with -me. Two of them, -too 'class' and -ryuu 'rate', express evaluation. Infrequently dai- is prefixed to the compounds formed on these two. -Too is used to evaluate a wide variety of things, and the compounds combine with bound monomes or precede free forms without the particle no: ittoohin 'first-class goods', nitoosyoo 'second prize', santoo untin 'third-class fare', kyoosoo de ittoo ni naru 'to take first place in a race'. Compounds formed on -ryuu express a subjective or impressionistic evaluation that seldom goes lower than sanryuu 'third-rate': itiryuu (no) daigaku 'a first-rate university'.

Compounds formed on -goo 'number' combine with bound monomes or precede free forms usually without no to form appellative sequences: zyuugoo (no) heya 'room no. ten', nizyuugoositu 'room no. twenty', itigoosya 'car no. one' (of a train). -Ban in this sense has a wider application than -goo. Further, if members of a sequence are themselves composed of consecutive members, -ban numbers the principal members and -goo the subordinate members. For example, trains are numbered by -ban and the cars making them up by -goo.

-Sei denotes a generation in natural descent and also in a succession of occupants of an office or position which they hold for life. The compounds are used most frequently to designate a member of a dynasty outside the Chinese culture area who bears the same name as a predecessor or successor. In this usage they follow the name, reflecting Western word order: Naporeon issei 'Napoleon I', Zyon D. Rokkuferaa sansei 'John D. Rockefeller III'. Overlapping -dai compounds, compounds formed on -sei precede artists' hereditary names and the names of offices held for life: zyuu gosei Itimura Uzaemon 'the fifteenth Ichimura Uzaemon', (dai-) zyuu hassei Tendai Zasu 'the eighteenth Tendai Abbot'. They are also used in statements of nationality: Amerikazin no sansei 'a third-generation American'.

Compounds formed on -tyaku 'arrival' designate the order in which contestants finish a race: (dai-) ittyaku no soosya 'the first runner in'.

The remaining adjuncts produce numeral compounds that never occur with the ordinal affixes: -men 'page' for designating pages of a newspaper (itimen 'the first page'); -gatu 'month' for designating the months of the year (itigatu 'the first month' = January); and -zi 'hour' for designating the hours of the day (itizi 'one o'clock').

Reference to the history of Japanese ordinals would no doubt better elucidate some aspects of the ordinal system. But ordinal expressions are hard to come by from merely scanning a text, and accumulation of facts would have to proceed gradually as an avocation. Yet from the modern data, and from knowledge of the history of the cardinal number system, one can put together something of a perspective into the past which permits a reasoned

guess as to how the major components of the ordinal system were assembled. From the beginning the Japanese have quantified things by counting other things in an attributive relation to them. The native ordinal affix is -me, and this must have been suffixed to the form modified by the number, i.e. the form denoting the attributive entity, as it is today. The result is a quantitative sequence. The concept of attributive entities would seem to lead naturally to recognition of a class of things that characteristically appear as constituents. However that may be, recognition of constituent things developed under Chinese influence as the intellectual level of culture expanded with an inflow of continental literature and scholarship. This historical fact is reflected in the Chinese provenance of most of the words that denote constituent things. With these loanwords came the ordinal prefix dai-. There seems to be no compelling reason why dai- should have been restricted to absolute sequences, since it is not so restricted in Chinese; but absolute sequences are typical of scholarship, and dai- has always been an academic form in the Japanese lexicon. In any case, the existence of a restricted dai- sequence makes it easier to understand the ordinal system by distinguishing a category of constitutive sequences in which dai- contrasts with -me. Constitutive sequences are made up of constituent things. Although this type of sequence is imperfectly distinguished inasmuch as -me occurs in it, it is reasonable to suppose that the Japanese are intuitively aware of it as something different from a quantitative sequence. For one thing, in cardinal number expressions they treat constituent things differently from self-contained things by counting them with the noun in the adjunct position, showing that they are attributive. And in ordinal expressions, too, they modify nouns denoting constituent things with -banme ordinals (-ban also comes from Chinese), which suppresses any sense of their particularity; -me ordinals formed on classifiers, which particularize their referents, are confined to quantitative sequences.

Once these three types of sequence--quantitative, constitutive, and absolute--are perceived under the complex interplay of -me, -banme, and dai-, the categories of dependent and appellative sequences readily take shape to explain the remaining mysteries of ordinal behavior. Further development of the system consists only in adding vocabulary in the form of numeral adjuncts. Most of this vocabulary is Chinese. It appears in various stages of naturalization, some forms being wholly bound, others partially bound, and others free; and it gives rise to fine distinctions of meaning as well as duplication of function, which often seem unnecessary to the practical working of an ordinal system. This formal diversity is due to a merging of two languages throughout all aspects of the expression of number, including even the numerals; and while it might cause us to ponder anew the Japanese patience with redundancy, so often manifested in a proneness to borrow without discarding, we would do well to assume, as the case of ordinal expressions demonstrates, that each instance is somewhere governed by a set of related and unifying concepts.

Notes

[1] -Ban appears in a small group of adjuncts that form numeral compounds having an ordinal meaning without the addition of the ordinal affixes. These compounds, which will be treated later as special cases of a constitutive sequence, are used either for ranking or for designating items by position. -Ban produces compounds of the designating type as in goban densya 'no. 5 tram', which is literally 'place five tram'. The use of -ban to create a com-

prehensive -me ordinal probably stems from this meaning. There is also a use of -ban as a classifier for counting performances of traditional entertainments such as games of chess, bouts of judo or wrestling, and performances of plays and dances. In this usage it acquires the meaning of 'a turn at performing', which I consider to be separate from its meaning in ordinal expressions.

[2]However, in the series for counting nondescript objects, -banme ordinals have no counterparts from 'the tenth one' on, because the classifier -tu, -ttu goes only as far as 'nine'. Thus the ordinals run in pairs up to 'the ninth one', which is kokonotume or kyuubanme, and thereafter are represented by -banme forms: zyuubanme, zyuu itibanme, etc.

[3]For example, itutume no heya for 'the fifth room' was characterized by one native speaker as childish.

[4]Assimilation in numerical forms is a matter tangential to my concern in writing this article and the one preceding it (Backus 1972); but its essential features are described in notes 10 and 16 of the latter. With numeral suffixes and monomial nouns (a monome being a Chinese loanword represented by a single graph), assimilation for dai- ordinals takes place following the patterns described in those notes. With other kinds of nouns (binomes, native words, and Western loanwords) there is no assimilation. The absence of assimilation in the second case constitutes a deviation from the pattern for cardinal number forms in that assimilated number-noun forms become unassimilated when dai- is added. For example, the number-class noun rokkatei 'six households' becomes dairoku katei, and the number-count noun issyurui 'one kind' becomes daiiti syurui.

[5]The term 'class noun' cannot be applied to time units unless its definition is broadened to include nouns that are never placed in construction with numbers or numeral compounds. Hi, tuki, and tosi are three such nouns; there must be many more. Actually the point of differentiating the nouns is to isolate the count nouns from all the rest, and the important feature of a count noun is that it occupies the adjunct position without undergoing a change in its meaning. That some count nouns are occasionally found as referents of numeral compounds while others never appear in that position is a difference that for the time being I consider to be secondary, and I have not taken the trouble tc test the count nouns for their behavior in this respect. Still, certain groups of count nouns are readily distinguished as incapable of occupying the referent position, one of which is the group of nouns that denote standard measures. To these must now be added the time units represented by count nouns; they appear in cardinal number expressions only as adjuncts within numeral compounds.

References

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